DOCUMENT RESUME

ED 451 008 RC 022 864

AUTHOR	Jimerson, Lorna
TITLE	A Reasonably Equal Share: Educational Equity in Vermont. A Status Report, Year 2000-2001.
INSTITUTION	Rural School and Community Trust, Washington, DC.
PUB DATE	2001-02-00
NOTE	28p.
AVAILABLE FROM	Full text at Web site: http://www.ruraledu.org/vt_equity.html.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Academic Achievement; *Educational Equity (Finance); Educational Legislation; Elementary Secondary Education; Expenditure per Student; *Finance Reform; School District Wealth; *School Taxes; *State Legislation
IDENTIFIERS	*Vermont

ABSTRACT

Vermont's Equal Educational Opportunity Act of 1997, Act 60, was designed to rectify educational inequities cited in the State Supreme Court ruling that the state's foundation formula was unconstitutional. This study examines the degree to which Act 60 has improved inequitable conditions in the three main areas cited in the court decision. Findings were that: (1) student resource equity has significantly improved, and financial resources spent on Vermont students no longer correlate to towns' property wealth; (2) tax burden equity has also improved significantly with the lowest-income households now paying the lowest percentage of income for school tax; and (3) academic achievement is still related to community wealth and spending per pupil, but student achievement in all categories of property wealth and spending has improved over the last 3 years, and the achievement gaps between the highest and the lowest property-wealth and spending categories have decreased over the past 3 years. Act 60 is performing according to the requirements of the court. Inequities are diminishing, but local control has not been abandoned. Tax burdens are more appropriately related to income. More children are performing better on statewide assessments. Seven appendices describe the Rural School and Community Trust, research methods, caveats when analyzing academic achievement, recommendations for future studies, definitions of variables used, contact information, and acknowledgements. (TD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 451 008

A REASONABLY EQUAL SHARE: EDUCATIONAL EQUITY IN VERMONT

A Status Report—Year 2000-2001

By
Lorna Jimerson, Program Coordinator
Rural School and Community Trust

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
R. Tompkins
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)"

A Report of the Rural School and Community Trust Policy Program
February 2001

BEST COPY AVAILABLE

RC 022864

A REASONABLY EQUAL SHARE:
EDUCATIONAL EQUITY IN VERMONT
A STATUS REPORT--YEAR 2000-2001

A Research Report by the Rural School and Community Trust
SUMMARY

Vermont's Equal Educational Opportunity Act of 1997, Act 60, was designed to rectify educational inequities that were the basis of the Supreme Court ruling (the *Brigham* decision) that declared the state's foundation formula unconstitutional. This study examines the degree to which Act 60 has improved inequitable conditions from previous years and the degree to which inequities still remain. It uses statewide data to investigate the three main equity goals of Act 60 and the *Brigham* decision: *Student Resource Equity*, *Tax Burden Equity* and *Academic Achievement Equity*.

The results of this analysis show that:

- **Act 60 funding mechanisms have made significant gains in increasing Student Resource Equity.** The amount of financial resources spent on students in Vermont is no longer correlated to towns' property wealth at a statistically significant level. (See graphs on page 6.)

- **Act 60 has significantly improved Tax Burden Equity in terms of the percent of household income needed to pay for education of local students.** Prior to Act 60, the poorest families tended to pay the highest percent of their income for school taxes. This relationship is no longer true. The lowest income households now pay the least percent of their income for school tax. (See graphs on page 9.)

- **With respect to equity in academic achievement, the study reveals the following:**
  Inequities still exist in academic achievement. Academic achievement is still significantly related to the wealth of the community. Students residing in property wealthy towns do better academically, than those residing in poor communities.

Academic achievement is still significantly related to spending per pupil. Students residing in towns that spend more per pupil tend to do better academically.

Student achievement in all categories of property wealth *and* in all categories of spending has improved over the past three years. More students are meeting or exceeding standards across all levels of spending and in all levels of property wealth, compared to three years ago. (See graphs on pages 12 and 13.)

The student academic achievement gap between the highest and the lowest *property wealth* categories has decreased over the past three years. Similarly, the gap in achievement between the highest and lowest *spending* towns has also decreased over the past three years. Thus there is some indication that Act 60 has enabled poorer towns to invest more for education--and that this provision of equal educational opportunity is beginning to positively impact student achievement.

We conclude that Act 60 *is* performing according to the requirements of the court and the intent of the legislature. We have found that inequities are diminishing, but local control has not been abandoned. Tax burdens are more appropriately related to income. More children are performing better on statewide assessments. Thus, we believe that Vermont is on the right course in the way it funds its schools.

A Reasonably Equal Share:
Educational Equity in Vermont
A Status Report--Year 2000-2001

A Research Report by the Rural School and Community Trust

"To keep a democracy competitive and thriving, students must be afforded equal access to all that our educational system has to offer. In the funding of what our Constitution places at the core of a successful democracy, the children of Vermont are entitled to a reasonably equal share." [1]

I. Introduction

Across the country, state governments continue the struggle to develop equitable, affordable and politically sustainable mechanisms for financing public schools. Achieving equity in funding has proven especially challenging. This seemingly simple task has consumed enormous legislative, judicial and political energy. In the past decade, for example, supreme courts in 21 states have ruled on the constitutionality of their financing laws.[2] In spite of litigation and continued public pressure, no state has yet found the perfect solution to the dilemma of equitable educational financing. Many states have, however, produced significant new funding systems designed to improve educational equity. Vermont is one of these states.

The Equal Educational Opportunity Act of 1997 (EEOA), commonly known as Act 60, was passed as a response to the Vermont Supreme Court ruling that the state's foundation formula was unconstitutional. In this decision, known as the *Brigham* decision, the court found that the prior *"system for funding public education in Vermont, with its substantial dependence on local property taxes and resultant wide disparities in revenues available to local school districts, deprive[d] children of an equal educational opportunity in violation of the Vermont Constitution."* [3]

Act 60 has attracted state and national attention because of its highly publicized opposition. The funding component has especially gained attention because of some of its more unique provisions--specifically the sharing provision and income sensitivity. The sharing, or "recapture," provision requires property-wealthy towns (often called "gold towns") to contribute to a state educational fund that helps support education in poorer communities.[4] This provision essentially equalizes the tax yield for any given tax rate. It has resulted in dramatically higher taxes for some communities that previously enjoyed much lower tax rates. This change has triggered community protests in several areas of the state and spawned intense political efforts to repeal Act 60 or at least eliminate the sharing provision.

---

[1] P. 22, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)
[2] Verstegen, D. A. (1999). The Impact of School Finance Litigation on Rural and Small Schools/Districts. (Available from Rural School & Community Trust, P.O. Box 68, Randolph, VT 05060)
[3] P. 1, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)
[4] Picus, L. O. (1998). Rethinking equity--there are alternatives. School Business Affairs, 64 (4), 3-8.

The most recent election (November 2000) sparked another fierce public debate about Act 60. Pre-election claims about the successes or failures of the act were plentiful. Some reports suggested the legislation has failed to meet its promises; other reports indicated it has been successful.

Given the contradictory nature of the claims and the vital importance for all students in Vermont to have access to a quality education, the Rural School and Community Trust (the Rural Trust) sponsored this research study of Act 60. The Rural Trust is a national nonprofit, non-partisan educational organization[5] with an interest in a broad range of educational policy issues.

This research effort has several goals. We wanted to take a careful, non-partisan look at the available information and begin to assess the impact of Act 60 on three facets of equity. We also wanted to inform citizens and policy-makers about the relative success or failure of Act 60 using the most current accurate data and a rigorous statistical analysis.

Though this research does in a sense evaluate Act 60, it should be noted that the Rural Trust is not interested in promoting any specific legislation. We do advocate, however, for educational equity, since we believe it is one of the fundamental pillars of a democratic society.

The following section of this report describes the equity goals embedded within the *Brigham* decision and Act 60. These goals became the focus of our research efforts. The next section discusses the specific research questions asked for each goal, the indicators used and the results of the analysis. More detailed information is presented in the Appendices.[6]

[5] More information about the Rural Trust is included in Appendix A.
[6] A list of the Appendices is contained on page 15

II. Equity Goals of the *Brigham* Decision and Act 60

Act 60, which was prompted by the *Brigham* decision, is constructed around three main equity goals: *Student Resource Equity*, *Tax Burden Equity* and *Academic Achievement Equity*. The following section describes and defines each of these three equity goals.

Goal 1. Improve *Student Resource Equity* The *Brigham* decision declares that *"the distribution of a resource as precious as educational opportunity may not have as its determining force the mere fortuity of a child's residence."* [7] Furthermore, the justices wrote that *"equal educational opportunity cannot be achieved when property-rich districts may tax low and property-poor districts must tax high to achieve even minimum standards..."* [8]

Prior to Act 60, there were significant disparities in spending per pupil, and even more notable differences in the tax rates needed to fund local schools. As noted in the *Brigham* decision, one town spent $2,979 per pupil in 1995, while another invested over two and a half times that amount--$7,726. An analysis by the Vermont Department of Education in 1996 noted that these spending differences most often were related to a town's property wealth.[9] Towns that were "resource-rich" could tax residents at a very low rate, yet generate very high revenues. Property poor communities were forced to tax at very high rates, and often generated much less revenue for their schools.

Act 60's equalized yield formulas are designed to address this inequity. Both the block grant provision and the above-block grant provision are based on a guaranteed yield system. Guaranteed yield formulas are designed so that one-cent of tax levy raises the *same amount per pupil* in *every* community. The fundamental principle behind the guaranteed yield provision is to enable communities to provide quality education with the same degree of tax effort as any other town that spends at a comparable level. A town's property wealth--or lack of it--no longer determines the tax rate. Equal spending results in equal tax rates.

Thus, the main equity goal of both the *Brigham* decision and Act 60 is that every child in Vermont will be provided an education backed by substantially equal resources. In this report, we call this form of equity *Student Resource Equity*.

Goal 2. Improve *Tax Burden Equity* for individuals The plaintiffs in the *Brigham* suit claimed that *"taxpayers from property-poor districts are compelled to pay higher tax rates and therefore contribute disproportionate sums to fund education."* [10]

Prior to Act 60, the tax burden on individuals varied enormously. An analysis by the Vermont Department of Education indicated that the school property tax burden in 1994 ranged from 8.2% of after-tax income to less than 1%. The report concluded that the "taxpayer equity in shouldering the tax burden...fluctuat[es] around a rather high value of inequity" with a federal range ratio of 248%. A ratio of 0% "would indicate perfect equity to the taxpayer." [11]

---

[7] P. 20, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)
[8] P. 23, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)
[9] A Scorecard for School Finance, FY 95. Published by the Vermont Department of Education, March 1996.
[10] P. 24, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)
[11] A Scorecard for School Finance, FY 95. Published by the Vermont Department of Education, March 1996.

Though Supreme Court justices declined to rule on the tax burden equity claim, Act 60 did deal with these inequities by including an income sensitivity provision (or property tax reduction component). This provision essentially adjusts the amount of school property taxes owed by individuals based on household income level.

The EEOA's inclusion of this provision clearly indicates that Vermont legislators believe that individual's tax burden should be commensurate with their ability to pay relative to their income. In this report, we refer to this type of equity as *Tax Burden Equity*.

Goal 3. Improve *Academic Achievement Equity* The *Brigham* decision does include some insight into the Supreme Court's view on the role of financing as it relates to student achievement. The justices acknowledged that the relationship between funding and academic achievement is not straightforward, but they also clearly recognized the role of adequate funding in providing educational opportunities. They state *"while we recognize that equal dollar resources do not necessarily translate equally in effect, there is no reasonable doubt that substantial funding differences significantly affect opportunities to learn."* [12]

Guided in part by the *Brigham* decision, the first fifteen pages of the EEOA bill contain the "quality components" of Act 60. These specific educational reform initiatives are all designed to improve student academic achievement. The implicit principle here is that allocation of additional funds should be targeted to actions that are effective in advancing student learning.

The relationship of student achievement to family and community wealth is one of the most consistent correlations found in education research. Students residing in wealthy communities tend to have higher academic achievement than those from poorer towns. Equity in academic achievement would imply that this connection would be weakened, if not severed. Thus, students living in poor communities would be just as likely to be academically successful as those residing in wealthy communities. In this report we call this form of equity *Academic Achievement Equity*.

[12] P. 9, *Brigham* v. State of Vermont, No. 96-502 (VT filed Feb. 5, 1997)

III. Results

For each of the three equity goals, *Student Resource Equity*, *Tax Burden Equity* and *Academic Achievement Equity*, we investigated the extent to which Act 60 reduced prior inequities, and the extent to which inequities still exist. In the sections below, we outline the questions addressed in this research for each goal and the indicators used in the analysis. The results for each goal are presented in graph form, followed by a discussion of the results.

Goal 1: *Student Resource Equity*

Questions:

- To what extent is the amount of financial resources allocated to students in Vermont dependent upon community wealth?
- How has the allocation of financial resources changed in the past three years?

Indicators:

- Degree to which *Property Wealth of Towns* is correlated with *Spending Per Pupil* for each of the years FY 98 (pre-Act 60) and FY 01

We defined *Property Wealth of Towns* as the equalized property value per pupil for each town.[13] The numbers used in each year are comparable. At the time of this report (January 2001), the latest numbers for equalized property wealth were not yet available for FY 01. This analysis, therefore, was conducted using FY 00 data for property wealth. We will update our analysis as soon as these data become available.

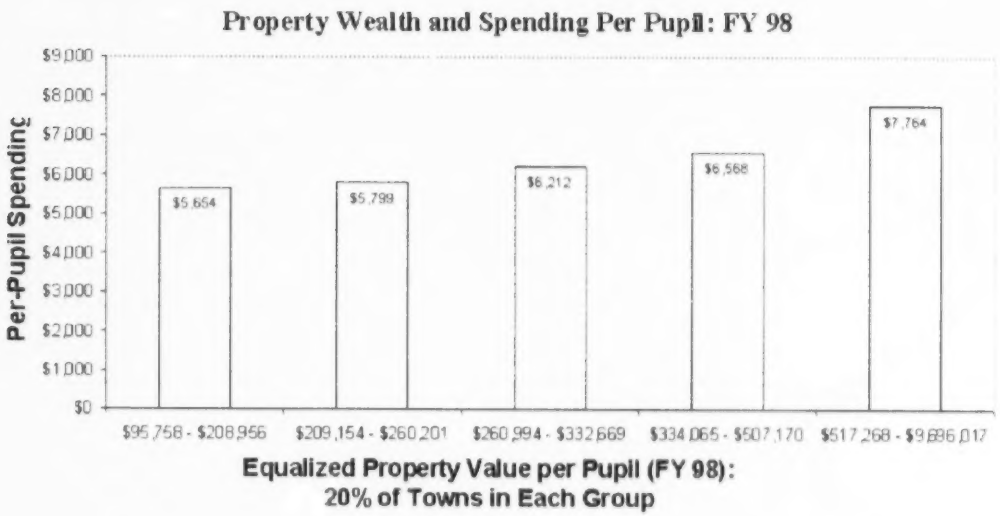
We defined *Spending Per Pupil* as the budgeted expenditures of each town as reported to the Department of Education--minus any federal or state categorical aid for that year. We chose that measure because we know that some costs, especially those associated with special education, can vary greatly per year. Also, some districts include special programs in their expenditures that are primarily paid for by grants. Since we wanted to accurately reflect the *effort* of towns to provide resources for students in schools, we subtracted revenue from state and federal categorical aid, from budgeted expenditures. We believe that this definition of spending provides a fair and valid comparison between FY 98 and FY 01.

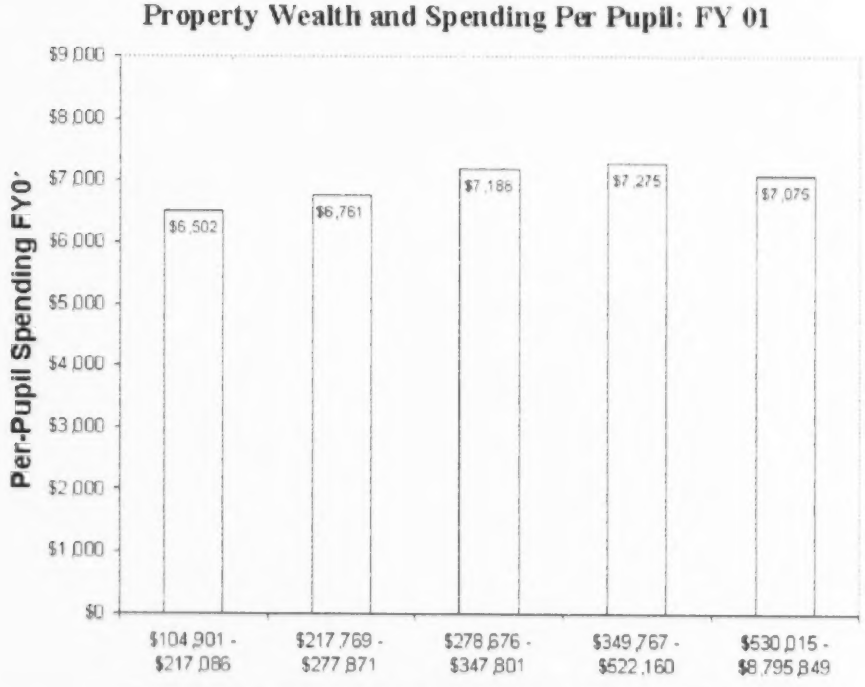
In this analysis, a Pearson correlation coefficient of 1.0 would indicate a perfect correlation between wealth of community and amount spent per pupil. (That is, towns with the highest property wealth would spend the most per pupil. Towns with the lowest property wealth would spend the least.) A zero coefficient would indicate that there was *no relationship* between town property wealth and the amount allocated for students. A zero correlation coefficient, therefore, would represent the statistical ideal state for perfect equity.

The following two graphs present the results of this analysis.

---

[13] More detailed operational definitions for variables used in this study are included in Appendix E.


Property Wealth and Spending Per Pupil: FY 98
Per-Pupil Spending
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
$5,654
$5,799
$6,212
$6,568
$7,764
$95,758 - $208,956
$209,154 - $260,201
$260,994 - $332,669
$334,065 - $507,170
$517,268 - $9,686,017
Equalized Property Value per Pupil (FY 98): 20% of Towns in Each Group


Property Wealth and Spending Per Pupil: FY 01
Per-Pupil Spending FY0
$9,000
$8,000
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
$6,502
$6,761
$7,186
$7,275
$7,075
$104,901 - $217,086
$217,769 - $277,871
$278,676 - $347,801
$349,767 - $522,160
$530,015 - $8,795,849
Equalized Property Value per Pupil (FY00): 20% of Towns in Each Group

Results for *Student Resource Equity* analysis:

In FY 98, prior to Act 60, there was a very strong, statistically significant correlation between town property wealth and the amount of financial resources allocated to education. Property wealthy towns were able to invest more money on children's schooling. Property poor towns were either unable or unwilling to make a similar level of financial investment.[14]

In FY 01, the first full year of Act 60 implementation, the correlation coefficient dropped and was **not** statistically significant.[15] Thus, the amount of financial resources being spent on students in Vermont is no longer significantly related to towns' property wealth. *To a large degree, the Act 60 funding mechanisms have made significant gains over the past three years in achieving increased equity in the per pupil spending.* We believe this increased equity is a direct result of the provisions in Act 60 that have allowed poorer communities to increase their investment in public education.

There are still differences in spending, and in fact, some inequity is still evident. The graphs show that, as before, towns with the lowest property wealth still spend the lowest amount per pupil. The straight line relationship, however, that formerly existed is no longer as obvious. This lack of a statistically significant relationship most probably reflects variations of spending due to budget decisions made on a local level. The importance of maintaining local control was noted in the *Brigham* decision and provisions were incorporated into Act 60 to accomplish this.

Thus, we recognize that while Act 60 has not yet been successful in *eliminating* student resource inequity, it has been successful in *significantly reducing* student resource inequity. This result is not trivial as it is essentially *the* primary goal of both the *Brigham* decision and of the Equal Education Opportunity Act of 1997.

[14] For FY 98: Correlation coefficient = .581, $p < 0.000$, N=251

[15] For FY 01: Correlation coefficient = .087, $p = .172$, N=251. NOT statistically significant.

Goal 2: *Tax Burden Equity*

Questions:

- To what extent are school property taxes commensurate with the ability to pay?
- How has this income-related tax burden changed in the past three years?

Indicators:

- Degree to which *Percent of Income Used for School Property Tax* is correlated with *Household Income* for each of the years FY 98 (pre-Act 60) and FY 00

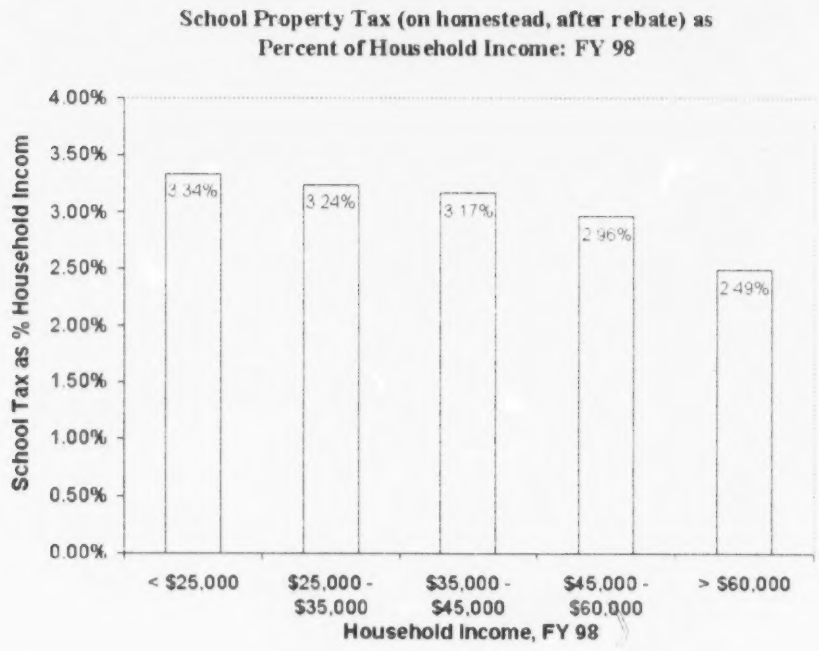
Percent of Income Used for School Tax was calculated as the actual school property tax paid on the homestead (house and 2 acres) after rebates. *Household Income* was defined as income reported to the Vermont Tax Department for each household. This analysis was conducted on very large samples (N= 129,674 for FY 98 and N = 122,477[16] for FY 00) and included school tax reductions from the homeowner rebate (both years) and income sensitivity (FY 00). Taxes for municipal expenses were excluded. By definition, renters, second-home owners and businesses are not included in this analysis, as they do not qualify for income sensitivity.

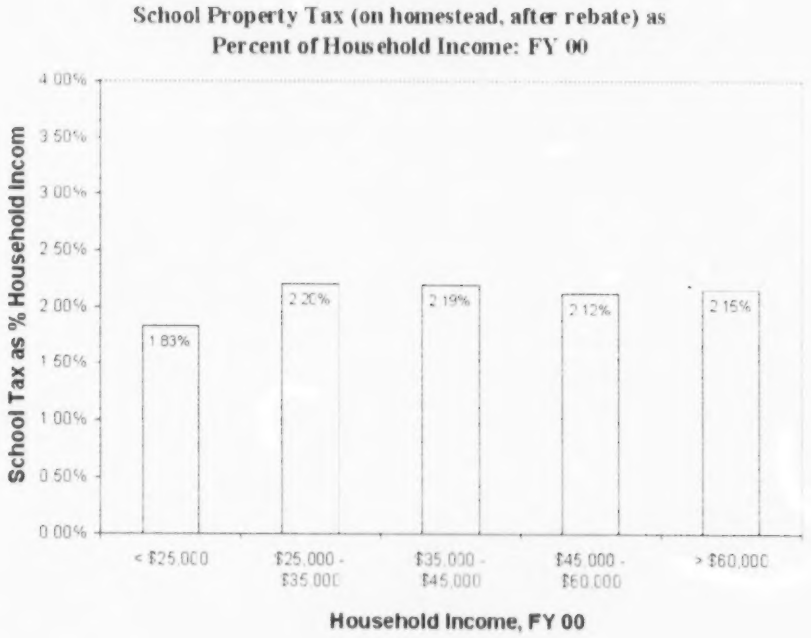
This analysis uses data from tax year 1999, since final numbers for the tax year 2000 will not be available until after taxpayers file in April 2001. As above, we intend to update our analysis when that information is available.

In this analysis, a correlation of minus one (-1.00) would indicate that the *lowest* income households paid the *highest* percent of their income for school property taxes, i.e., a regressive situation. A plus one correlation coefficient (+ 1.00) would imply the opposite, that the households at the lowest income level paid the least percent of their incomes for school taxes. A zero correlation would indicate that the tax burden was equal for all income groups.

The following two graphs present the results of this analysis.

[16] This represents an estimated 70% of all homeowning households in FY 00. The results of the 2000 Census are not yet available. According to the 1990 Census, there were 145,368 such households in Vermont in 1990. Assuming an annual growth of 1%, it is estimated that there are about 160,000 homeowning households in FY 2000.


School Property Tax (on homestead, after rebate) as
Percent of Household Income: FY 98
School Tax as % Household Incom
4.00%
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
3.34%
3.24%
3.17%
2.96%
2.49%
< $25,000
$25,000 - $35,000
$35,000 - $45,000
$45,000 - $60,000
> $60,000
Household Income, FY 98


School Property Tax (on homestead, after rebate) as
Percent of Household Income: FY 00
School Tax as % Household Incom
4.00%
3.50%
3.00%
2.50%
2.00%
1.50%
1.00%
0.50%
0.00%
1.83%
2.20%
2.19%
2.12%
2.15%
< $25,000
$25,000 - $35,000
$35,000 - $45,000
$45,000 - $60,000
> $60,000
Household Income, FY 00

Results for *Tax Burden Equity* analysis:

In FY 98 (Tax Year 1997) there was a strong, statistically significant relationship between the percent of school property taxes paid by individuals on their homestead and their household income. It was a *negative* relationship, meaning that individuals with *lower incomes* tended to pay a *higher percent* of their income for school taxes.[17]

In FY 00, this relationship was very different. This year there is a *positive* correlation between income level and percent of income going to school taxes. The relationship is also statistically significant. [18]

Prior to Act 60, households earning less than $25,000 paid more than three percent (3.3%) for school taxes in FY 98. In FY 00 these households paid less than two percent for school taxes (1.8%). In FY 98, households earning over $60,000 spent about two and a half percent (2.45%) on school property taxes. In FY 00, this income group spent 2.15% in school taxes, less than one-half of a percentage point more than the lowest income households.

Our findings, therefore, indicate that Act 60 has significantly improved tax burden equity in terms of the percent of household income needed to pay for education of local students.

[17] For FY 98: Correlation coefficient = -.181, $p < 0.000$, N = 129,600
[18] For FY 00: Correlation coefficient = .033, $p < 0.000$, N = 122,477

Goal 3: *Academic Achievement Equity*

Questions:

- To what extent is student academic achievement related to the wealth of a community?
- How has the relationship between student achievement and wealth of the community changed in the past three years?

- To what extent is the degree of financial investment (spending per pupil) related to student achievement?
- To what degree has the relationship between spending per pupil and academic achievement changed over the past three years?

Indicators:

- Degree to which *Property Wealth of Towns* is correlated with *Student Academic Achievement* for each of the years FY 98 (pre-Act 60) and FY 00
- Degree to which *Spending Per Pupil* is correlated with *Student Academic Achievement* for each of the years FY 98 (pre-Act 60) and FY 00

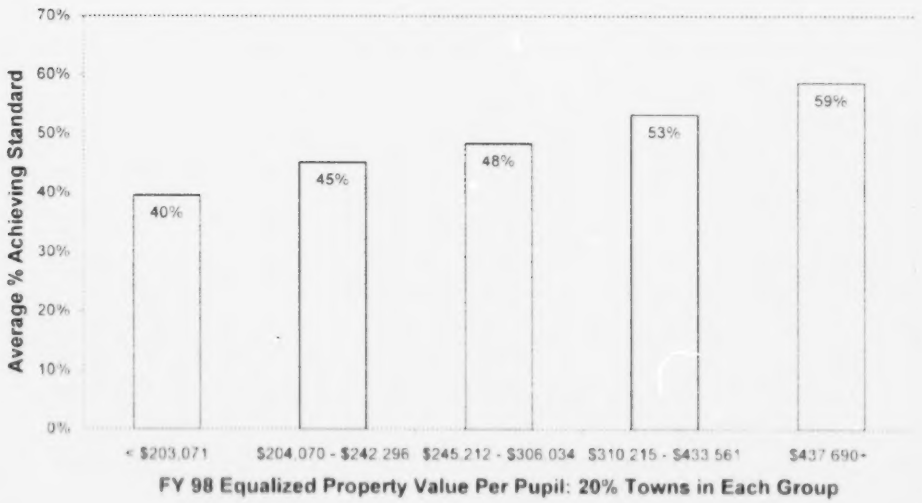
Property Wealth of Towns was defined as the equalized property value per pupil as described in Goal 1. We defined *Spending Per Pupil* as the budgeted expenditures of each town as reported to the Department of Education--minus any federal or state categorical aid for that year. This is the same definition as we used in the Goal 1 analysis.

As a measure of *Student Academic Achievement*, we utilized the results of the New Standards Reference Exam (NSRE) for 4th grade. There are seven subtests for 4th grade: three in mathematics and four in language arts. We averaged the percent of students who met or exceeded the standards on each of these seven subtests for each town that operates an elementary school and had at least 5 students taking the tests (N = 172). Since these results were compared by town-level wealth indicators, we did not include the several elementary schools that are union districts, as we were unable to relate this to a specific town wealth factor. Also, we eliminated schools where N<5 for students who took the test in grade 4, since these results are not reportable to the public because of confidentiality concerns.

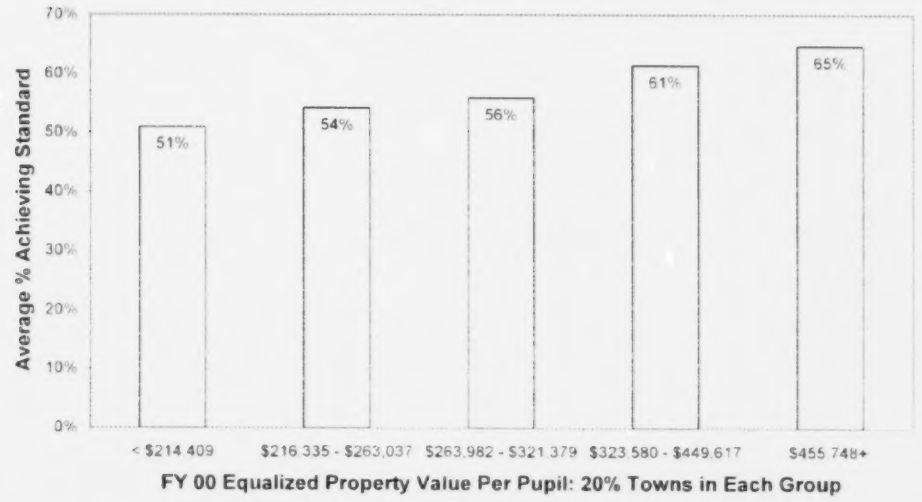
In both of these analyses, a Pearson correlation coefficient of 1.0 would indicate a perfect correlation between student academic achievement and either wealth of community or spending per pupil. (That is, students living in towns with the highest property wealth would have the highest academic achievement. Similarly, students from towns that spend the most per pupil would have the highest academic achievement.) A zero coefficient would indicate that there was *no relationship* between town property wealth or per pupil spending and academic achievement. A zero correlation coefficient, therefore, would represent the statistical ideal state for perfect equity.

The graphs on pages 12 and 13 show the results of this analysis. The first two graphs show the relationship of *Property Wealth of Towns* to *Student Academic Achievement* . The graphs on the following page show the relationship of *Spending Per Pupil* to *Student Academic Achievement*.

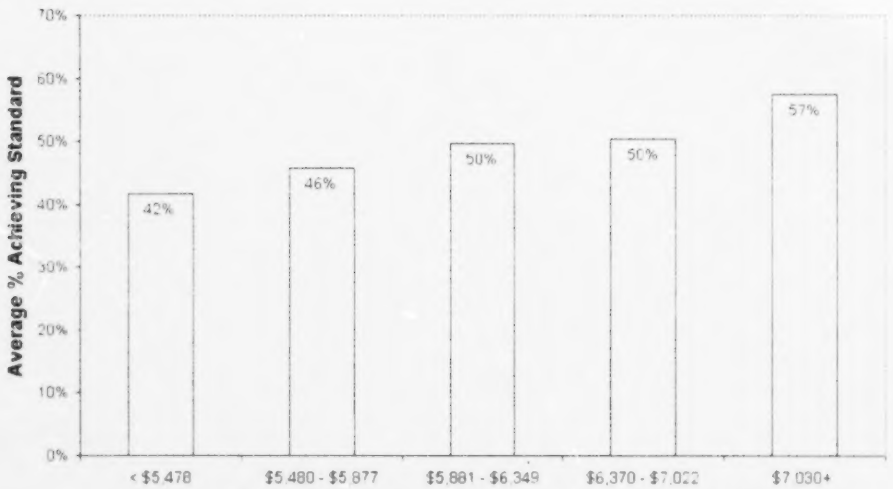
Academic Achievement and Property Wealth, FY 98:
Average Percent Meeting or Exceeding the Standards on
Grade 4 New Standards Reference Exams



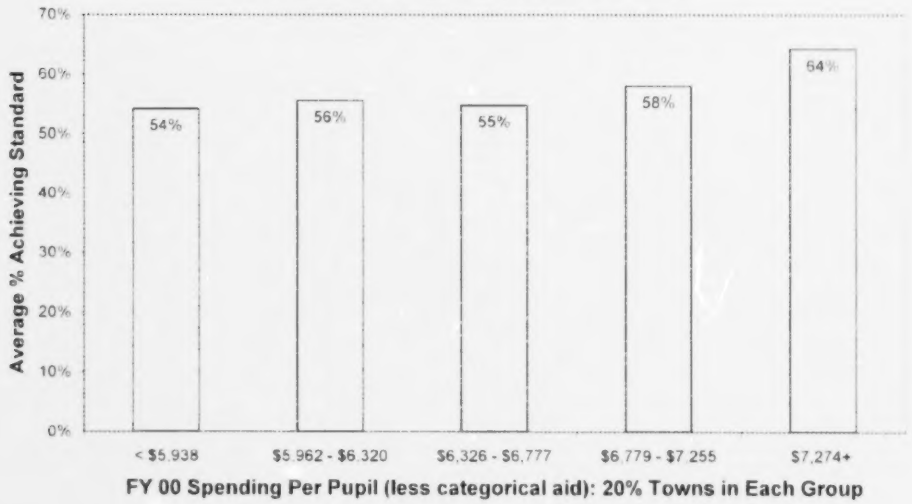
Academic Achievement and Property Wealth, FY 00:
Average Percent Meeting or Exceeding the Standards on
Grade 4 New Standards Reference Exams



Academic Achievement and Spending, FY 98:
Average Percent Meeting or Exceeding the Standards on
Grade 4 New Standards Reference Exams



Academic Achievement and Spending, FY 00:
Average Percent Meeting or Exceeding the Standards on
Grade 4 New Standards Reference Exams



Results for *Academic Achievement Equity* analysis:

These results indicate that national patterns connecting student achievement to economic wealth can be found in Vermont as elsewhere. This relationship existed in FY 98 *and* FY 00 and is statistically significant for both years.[19] That is, students living in property rich towns tend to perform better on academic assessments than those in property poor towns.

Although community wealth is related to higher academic achievement, students in all categories of community wealth have improved in academic performance since 1998. Last year, a greater percent of students living in poor communities were meeting or exceeding the standards than in 1998. Similarly, a greater percent of students in wealthier communities were meeting or exceeding the standards, than two years before. Thus, there is no evidence that achievement gains for students residing in poorer communities came at the expense of achievement gains for students from wealthier towns.

Of particular interest is the difference in the achievement gaps between the lowest and highest categories of property wealth in FY 98 and FY 00. In FY 98, 40% of students residing in the poorest communities met or exceeded the standards. In the highest category of community wealth, 59% of the students met or exceeded the standards. The gap, therefore, was a difference of 19 percentage points. In FY 00, the difference between the highest property wealth quintile and the lowest was only 14 percentage points. Thus, the gap decreased on this indicator by 5 percentage points, or 26%. We believe that if this trend continues, it will be a very significant indication that inequities in academic achievement are diminishing. We believe this trend demands continued study.

The additional question we posed was whether student achievement is related to spending. We found that this relationship is evident in both FY 98 and FY 00 and is statistically significant in both years.[20] Students living in towns that spend more per pupil, tend to do better in these assessments, than students from towns that spend less. Children living in towns that invest less money in schooling tend to perform worse.

This strong relationship between educational spending and academic achievement has implications about how *equity* of student achievement may be achieved. If Act 60 is, indeed, allowing poorer communities to invest more in education, then these results suggest that eventually children in these towns may perform as well as those in wealthier districts. The reduction of the achievement gap is an encouraging trend. It suggests that Act 60's provision of equal educational opportunity will ultimately be translated into allowing every child, from every economic background, an equal opportunity to be academically successful.

In some ways, this may be viewed as *the* decisive test of authentic educational equity.

---

[19] For FY 98: Correlation coefficient = 0.274, $p < 0.000$, N =179
For FY 00: Correlation coefficient = 0.267, $p < 0.000$, N =184

[20] For FY 98: Correlation coefficient = 0.378, $p < 0.000$, N =179
For FY 00: Correlation coefficient = 0.249, $p < 0.001$, N =184

IV. CONCLUSIONS

Our analyses of the status of educational equity in Vermont indicates that on the three primary equity measures central to the Brigham decision and Act 60, there is notable improvement since implementation of Act 60:

- ***Property wealth no longer dictates the amount of financial resources allocated by communities to educate their children.***
- ***The tax burden of school taxes relative to income is significantly more equitable.***
- ***The achievement gap between children living in wealthy communities and those living in poorer communities is beginning to shrink.***

These findings suggest the following:

1. ***Act 60 is performing according to the requirements of the court and the intent of the legislature.*** Prior inequities are dissipating.

2. Act 60 dared to go where few funding formulas have previously ventured--towards a system that provides substantial equal educational opportunities while maintaining local control of budgets. By using a two tiered funding system, the act mandates a bottom level of financial investment and then invites communities to spend above this amount--if they choose. This is a tough balancing act and it appears to be working. ***The enormous range of disparities of spending has evaporated, but there is no uniformity.***

3. Before Act 60, school property taxes on homesteads took a much higher share of the income of the poorest households. These ***school taxes now take about the same share of the income for all households.*** And that share is lower than it was for *all* income groups.

4. Vermont still suffers an achievement gap between students from wealthier and poorer communities, as does our nation as a whole. But we see hopeful signs of change. While we are cautious about concluding too much on the basis of short-term assessment results, Vermonters should not ignore these findings:

- More children from both more affluent and less affluent communities are performing better on statewide assessments. The gains of children living in poorer towns have not been at the expense of achievement gains for those living in wealthier towns. ***Everyone is winning.***

- But children from the poorer towns are gaining in achievement even faster than children from the wealthier towns, so the achievement gap between them is narrowing. In fact, there appears to be a strong relationship between spending and achievement. ***Children being afforded greater opportunity are taking*** *advantage of it.*

Nothing important is about money alone, and there is nothing perfect about any school finance system. All of the above suggest, however, that Vermont is on the right course in the way it funds its schools. Inequities are diminishing, but local control has not been abandoned. Tax burdens are more appropriately related to income. More children are performing better on statewide assessments. These changes have not been without pain, both for some individuals and for the state's civic culture. But they have been for the better.

List of Appendices

	Page
Appendix A: The Rural School and Commmunity Trust	17
Appendix B: Research Methods	18
Appendix C: Caveats When Analyzing Academic Achievement	19
Appendix D: Recommendations for Future Studies	20
Appendix E: Operational Definitions of Variables Used in this Study	21
Appendix F: Contact Information	23
Appendix G: Acknowledgements	24

APPENDIX A

The Rural School and Community Trust

The Rural School and Community Trust (Rural Trust) is a national nonprofit organization dedicated to improving student learning and enhancing community life in rural areas of the United States. Its seeks to do this by strengthening relationships between rural schools and communities and engaging students in community-based work. The Rural Trust was founded in 1995 as the Annenberg Rural Challenge. Today it works with more than 700 rural schools in 35 states.

The Rural Trust's program includes a capacity-building program and a policy-program. The capacity-building program encourages rural schools to design and implement place-based learning initiatives. Place-based pedagogy is rooted in a belief that when school curriculum incorporates the history, culture, ecology and economy of local communities, both communities and schools are strengthened in significant and sustainable ways.

In Vermont, the Vermont Rural Partnership (VRP) is one of the Rural Trust sponsored initiatives. The partnership, founded in 1996, has grown to include 16 small schools and communities. The goals of the partnership mirror those of the Rural Trust. The partnership works together to strengthen schools and communities by building relationships, using the community as a resource and serving community needs. More information is available from Margaret MacLean, the principal of Peacham School, a VRP site.

The Rural Trust policy program has similar goals as the capacity-building program. This program seeks to inform the general public, policy-makers and rural schools and communities about public policies that benefit or hurt rural schools and their communities. As part of its advocacy efforts, the policy program works to engage rural citizens in becoming more effective in public deliberations. The Rural Trust policy program sponsors research, advocacy efforts, and publications designed to help rural communities be informed and act on policy issues affecting them.

There are presently four major issues that the policy program is focused on: standards and assessment, educational equity, school facilities and school governance. This research study is under the umbrella of the policy program as part of its ongoing investigation and work on understanding issues surrounding financial equity.

For many rural schools across America, the lack of equitable and adequate financial resources has been a significant barrier to excellent rural education. The Rural Trust believes that part of the strength and richness of rural America is rooted in the ability of rural communities to maintain local traditions, local control and local culture. The Rural Trust believes, however, that equity and local decision-making need not be mutually exclusive. This balance, however, is not easily implemented. The ability of any one state to achieve a workable financing model that balances local discretion and equitable state financing will benefit rural schools in other states.

APPENDIX B

Research Methods

Our research efforts included several phases as outlined below.

Identification of appropriate research questions. One initial task of this study was the identification of which research questions to ask. Our primary research parameters were quite broad. We knew we were interested in equity and the impact of Act 60 in this regard. This meant that we needed to define what we mean by "equity."

"Equity" is often used colloquially and with a range of meanings. For purposes of this study, we went back to the original Supreme Court case (the *Brigham* decision) and to the legislation, Act 60, to see how the term had been used. Thus, our first task involved a careful dissection of both the *Brigham* decision and the legislation. The equity goals of Act 60 and the *Brigham* decision then became the basis for this research.

Data collection and analysis. The data came from state sources, either from the Department of Education, the Joint Fiscal Office or the Tax Department. Our goal was to locate and use the most accurate data available. In several cases we had a choice of what numbers to use. For example, different ways of calculating school district spending have been used over the years. We chose to use data that would be comparable over time and comparable across districts.
Statistical analysis. We contracted with a highly qualified independent statistician (Deb Brighton) to run the analyses for this study. Given the complex nature of the variables, we chose to run statistics that indicate relationships (correlation coefficients) rather than tests that determine causality. We asked the statistician to display the results in graph format for ease of presentation. We also consulted with her about interpreting the results.

Independent feedback. We asked two respected knowledgeable individuals to act as an advisory committee to review this report and give critical input. We requested feedback to ascertain that our report was as impartial, accurate, comprehensible and informative as possible. We anticipated a wide variety of audiences and wanted the report to be scientifically rigorous, but also readily understandable for the general public.

The following people served in this capacity:
Marc Hull--Educational consultant, former Commissioner of Education for the state of Vermont
Sally Sugarman--Professor of Childhood Studies at Bennington College, former chair of the State Board of Education

APPENDIX C

Caveats When Analyzing Academic Achievement

This study defines academic achievement as the percent of students meeting or exceeding the standards on the New Standards Reference s (NSRE). The specific indicator used in the analysis was the average of the percentage of students meeting or exceeding the standards across seven subtests. Our analysis was limited to the fourth grade results.

There are several caveats to this analysis. The following is a brief discussion outlining potential limitations of the analysis.

First, we know that using an *average of percentages* is not the same as the absolute or scaled scores on assessment tests. Thus our definition of academic achievement uses a surrogate construct for actual academic achievement. We believe that though the indicator is in some ways crude, that it does provide a valid snapshot of students' performance. Also, the use of percentage of students meeting or exceeding the standards is a commonly used convention, both in Vermont and nationally for assessing academic achievement. We also realize that Vermont has been using the NSRE for only three years and that this is hardly enough time to establish trends.

In addition, national assessment research suggests that up to 70% of the variance of test results in criteria-referenced exams may be due to "cohort effects." Particular groups of children may do very well one year. The next year, an entirely different set of children take the exam. Comparison from year-to-year therefore needs to be done very cautiously. In this study, we felt, however, that probable cohort effects would be minimized by including the entire state in the population. Some cohorts in some schools most probably inflate the data, while other cohorts may deflate the data.

Another factor that may influence achievement results is the particular form of the NSRE taken. In 1998, students took Form C of the NSRE. In 1999 and 2000, Form D was used.

Another caveat is not evident in this study, but may become important in future years. Educators have recognized a phenomenon known as an "implementation dip" when beginning a new system of assessment. Researchers have found that the results of the first few years of implementing a new assessment typically show significant improvement. These encouraging advances, however, are frequently followed by a "dip" in the gains. If this occurs with the NSRE in Vermont, then the improvement noted from 1998 to 2000 may not be sustained in the next few years. Educators predict that after several years the effects of the "implementation dip" will level off.

And lastly, student academic performance is the result of accumulated experience for each student. Students' test results in 4th grade do not merely reflect the learning experiences in 4th grade, but also include learning from preschool, kindergarten, 1st, 2nd and 3rd grades. Thus, improvement from the provision of additional resources or instructional strategy for one or two years may not show up in changes in assessment results, at least for a while.

APPENDIX D

Recommendations for Future Studies

Other Act 60 research areas. This research study focused on the three primary equity goals of Act 60 (student resource equity, tax burden equity and equity of student academic achievement). We recognize that additional areas of Act 60 are not covered in this research.

There are other financial implications of Act 60 not included here. For example, Act 60 has dramatically raised taxes for some people. We also know that second-home owners and businesses do not benefit from the income sensitivity provisions. We realize that other state taxes have increased to help fund Vermont's public schools. A complete evaluation of Act 60 would also include these areas.

A thorough evaluation of Act 60 would also investigate the impact of specific quality components. For example, Act 60 contains requirements for needs-based professional development, action planning, uniform data collection, increased accountability by the commissioner of education, and annual public reporting of school progress.

We chose not to research these issues in order to focus on the principal goals called for by the *Brigham* decision and included in Act 60. Both documents are fundamentally focused on improving *equity* for students--and ultimately we decided to ask research questions that reflect this primary goal.

Academic achievement analysis. As discussed in Appendix C, we are aware of the complexity of issues surrounding the appropriate use of achievement data. We recommend, therefore, that the state continue to research academic achievement using a variety of parameters.

For example, our academic achievement indicator averaged the percent of students meeting or exceeding the standards across seven subtests. Some educators have suggested that a more appropriate indicator might be the scaled scores on the NSRE, rather than percent of students achieving the standards.

The most rigorous analysis, however, will be longitudinal. At this point there are only three years of assessment data available. Only two of these years utilize the same test form. Thus we recommend that longitudinal student achievement analysis continue to be a priority of the state over the next several years.

APPENDIX E

Operational Definitions of Variables Used in this Study

Property wealth of towns:
Defined as the equalized property value of each town. This is the total appraised value of all properties in each town after being adjusted (equalized) for "fair market" value. This equalization adjustment is determined annually by the Property Valuation Division of the Tax Department. The property wealth value was divided by the equalized pupil count.

Equalized pupil count:
Defined in Vermont statute 16 V.S.A. section 4001(3) and determined by the Department of Education. The actual number of students is adjusted to reflect grade level, poverty and number of students for whom English is not the primary language. It is calculated as the long-term weighted average daily membership (ADM), multiplied by the ratio of the statewide long-term ADM to the statewide long-term *weighted* ADM.

Spending per pupil:
Defined here as the "local education spending" (LES) plus donations, as reported to the Department of Education. This measure is not perfect. First, there may be errors in the reporting of donations. Second, there was a change in the state aid for special education and transportation under Act 60. The measure chosen slightly *underestimates* the increase in total spending between the two years (FY 98 and FY 01) in towns that had a low foundation share under the old system (i.e., towns with high property-wealth per pupil). However, *within either year*, it is comparable between towns.

Local education spending (LES):
Defined in Vermont statute 16 V.S.A. section 4001 (6) as the amount of the school budget "which is paid for by the general state support grant and from local share property tax revenues. (It) does not include any portion of the school budget paid for by any other sources such as endowments, parental fund raising, federal funds, nongovernmental grants or other state funds such as special education funds under chapter 101" of Title 16.

School property tax:
Defined here as the *net* school property tax paid on the homestead *after* accounting for income sensitivity adjustments and rebates. The homestead is a year-round residence and up to two acres, as defined by Vermont statute 32 V.S.A. section 5401 (7). In FY 98, the net school property tax was the school tax rate as applied to the homestead value. For homeowners eligible for the rebate program, the savings have been subtracted from the calculations of their tax. In FY 00, the net school property tax includes adjustments from the income sensitivity, as well as the rebate program.

Household income:
Defined in Vermont statutes 32 V.S.A. section 6061. With some exceptions, this is basically the combined adjusted gross income (AGI) for all persons in a household.

For FY 98, the Tax Department had information on the property taxes paid by homesteads for all homeowners who filled in the appropriate boxes on their income tax return. This data was linked to

the AGI of the filer and, if the household applied for the rebate program, the household income. When various options were being analyzed to respond to the *Brigham* decision, the Joint Fiscal Office estimated household income by using the actual household income if known (predominantly for lower income households) and regression equations to convert AGI to household income for the others. The Joint Fiscal Office analysis of the relationship between household income and school taxes in FY 98 is used in this report.

In FY 00, we used the actual household income figures as reported by those who filed for income sensitivity.

Data used within each year are consistent. There are some differences between FY 98 and FY 00. Some household incomes were estimated in FY 98. Also, FY 98 data includes more high-income filers, while FY 00 generally does not include households with income over $88,000. If more high-income filers were included in the FY 00 data set, we would expect to see the "school property tax as a percent of income" drop slightly in the highest income group.

APPENDIX F

Contact Information

The principal investigator of this study is Lorna Jimerson, Ed.D. Lorna is a staff member of the policy program of the Rural School and Community Trust. Questions about this report should be directed to:

Lorna Jimerson
221 Roscoe Rd.
Charlotte, VT 05445
802-425-2497
lorna.jimerson@ruraledu.org

For additional copies of this report, contact:

Christine Damm
Rural School and Community Trust
PO Box 68
Randolph, VT 05060
802-728-5899
802-728-2011 FAX
policy.program@ruraledu.org

For more information about the Rural Trust Policy Program, contact:

Marty Strange
51 South Pleasant Street
Randolph, Vermont 05060
802-728-4383
marty.strange@ruraledu.org

For more information about the Rural Trust contact the national office at:

Rural School and Community Trust
1825 K Street, NW, Suite 703
Washington, DC 20006
202-955-7177
www.ruraledu.org

APPENDIX G

Acknowledgements

The author would like to thank many individuals that offered their expertise and time to guide these analyses.

Deb Brighton, our statistician, provided professional consultation and thoughtfulness, as well as exceptional technical advice. I thank her for her unrelenting integrity and personal patience with my multiple, frequent requests.

I also very much appreciate the thoughtfulness of the review team, Marc Hull and Sally Sugarman, for critical feedback and constructive suggestions. Their insightful, professional comments have enhanced my understanding of this complex issue.

Many individuals working in several state departments have been very supportive of this effort and responsive to requests for data. The Department of Education, the Joint Fiscal Office and the Tax Department have all provided answers to questions, as well as access to data. I would also like to thank numerous other colleagues who have also provided me with thoughtful input and objective guidance.

THE RURAL SCHOOL AND COMMUNITY TRUST

The Rural School and Community Trust (Rural Trust) is a nonprofit educational organization dedicated to enlarging student learning and improving community life by strengthening relationships between rural schools and communities and engaging students in community-based public work.

Through advocacy, research and outreach, the Rural Trust strives to create a more favorable environment for rural schooling, for student work with public audience and use and for more active community participation in schooling.

Founded as the Annenberg Rural Challenge in 1995, the Rural Trust today works with more than 700 rural elementary and secondary schools in 35 states.

Rural School and Community Trust
www.ruraledu.org

National Office
1825 K Street NW
Suite 703
Washington, DC 20006
(202) 955-7177

Policy Program Office
P.O. Box 68
Randolph, VT 05060
(802) 728-5899

policy.program@ruraledu.org

BEST COPY AVAILABLE